

Rec'd PCT/PTO 07 JAN 2004

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

10/520635

Applicant's or agent's file reference 200200029-PC	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/22579	International filing date (day/month/year) 18 July 2003 (18.07.2003)	Priority date (day/month/year) 19 July 2002 (19.07.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): F16K 31/12 and US Cl.: 137/14, 487.5		
Applicant MYKROLIS CORPORATION		

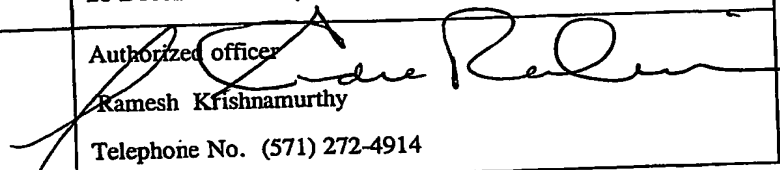
- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of ___ sheets.

- This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 10 December 2003 (10.12.2003)	Date of completion of this report 28 December 2004 (28.12.2004) 04 JAN 2005
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer  Ramesh Krishnamurthy Telephone No. (571) 272-4914

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/22579

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed.
- ☒ the description:
 pages 1 - 58 as originally filed
 pages NONE, filed with the demand
 pages NONE, filed with the letter of _____
- ☒ the claims:
 pages 59 - 72, as originally filed
 pages NONE, as amended (together with any statement) under Article 19
 pages NONE, filed with the demand
 pages NONE, filed with the letter of _____
- ☒ the drawings:
 pages 1 - 32, as originally filed
 pages NONE, filed with the demand
 pages NONE, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages NONE, as originally filed
 pages NONE, filed with the demand
 pages NONE, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☒ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention is accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. _____

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V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims <u>Please See Continuation Sheet</u>	YES
	Claims <u>Please See Continuation Sheet</u>	NO
Inventive Step (IS)	Claims <u>Please See Continuation Sheet</u>	YES
	Claims <u>Please See Continuation Sheet</u>	NO
Industrial Applicability (IA)	Claims <u>Please See Continuation Sheet</u>	YES
	Claims <u>Please See Continuation Sheet</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 1, 2, 4, 5, 7 - 10, 13 - 15 and 39 lack novelty under PCT Article 33(2) as being anticipated by WO 02/25391.

The document WO 02/25391 discloses (Figs. 1 - 7B) a fluid flow control apparatus comprising a proportional flow valve (40) having a fluid inlet and a fluid outlet, a pneumatic proportional flow control valve (43) in communication with the flow valve (34) for modulating the valve (34), a frictional flow element (56), means (46, 48) for measuring the pressure drop across the element (56) and a flow controller (70).

Claims 16 - 18, 23, 24, 26 and 30 - 32 lack novelty under PCT Article 33(2) as being anticipated by Walton et al. (US 6,102,071).

Walton et al. discloses (Fig. 14, for example) a proportional fluid control valve that comprises a first valve cavity (in (202)) a first diaphragm in the first valve cavity, a second valve cavity (in (114) above diaphragm (144)), a second diaphragm (144), a spring (disposed around (198)).

The proportional fluid control valve disclosed by Walton et al. further comprises a fluid inlet (near (124)), a first annular cavity in fluid communication with the inlet, an annular passageway communicating the inlet to a fluid outlet (132) via a second annular cavity.

Claims 35 - 38 lack novelty under PCT Article 33(2) as being anticipated by McLoughlin et al. (US 6,348,098).

McLoughlin et al. discloses a stop/suckback valve (10) having associated on/off periods that are variable and the disclosure of McLoughlin et al. (Col. 4, lines 19 - 67) anticipates the method recited in claims 35 - 38.

Claims 3, 6, 11, 12, 19 - 22, 25, 27 - 29, 33, 34 and 40 - 52 meet the criteria set out in PCT Article 33(2)-(3), because the prior art of record does not teach or fairly suggest the limitations claimed therein.

Claims 1 - 52 meet the criteria set out in PCT Article 33(4), and thus satisfy industrial applicability because the subject matter claimed can be made or used in industry.

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Supplemental Box

To be used when the space in any of the preceding boxes is not sufficient)

V.1. Reasoned Statements:

The opinion as to Novelty was positive (Yes) with respect to claims 3,6,11, 12, 19 - 22, 25, 27 - 29, 33, 34 & 40 - 52 |
The opinion as to Novelty was negative (No) with respect to claims 1,2,4,5, 7 - 10, 13 - 18, 23, 24, 26, 30 - 32 & 35 - 39
The opinion as to Inventive Step was positive (Yes) with respect to claims 3,6,11, 12, 19 - 2, 25, 27 - 29, 33, 34 & 40 - 52
The opinion as to Inventive Step was negative(NO) with respect to claims 1,2,4,5,7 - 10, 13 - 18, 23, 24, 26, 30 - 32 & 35 - 39
The opinion as to Industrial Applicability was positive (YES) with respect to claims 1 - 52
The opinion as to Industrial Applicability was negative(NO) with respect to claims NONE